

GENERIC · POWERTRAIN

P04F4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P04F4

Catalyst Heater Circuit Low Bank 1

P04F4 is a generic powertrain code indicating that the powertrain control module (PCM) has detected a low-voltage condition in the heater circuit for the catalytic converter on bank 1. The PCM monitors the heater element, which is used to bring the catalyst up to operating temperature quickly after a cold start, and it sets this code when the circuit voltage falls below the expected threshold, suggesting an open circuit, high resistance, or a short to ground.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
Often no other symptoms besides the warning light, especially if the catalyst still reaches operating temperature during normal driving.
- Possible slight increase in emissions during cold starts because the catalyst heats more slowly.
- In some cases, a noticeable delay in catalyst light-off can cause a rough idle or hesitation immediately after a cold start.
- If the heater circuit is completely open, the catalyst may never reach full efficiency, potentially triggering a catalyst efficiency code (P0420) later.
- Rarely, a short to ground in the heater circuit can blow a fuse, causing other circuits on the same fuse to stop working.

Common causes, most likely first

- 1 Open or broken wire in the heater circuit, often due to corrosion, flexing, or rodent damage.
- 2 Failed catalytic converter heater element (open circuit inside the heater).
- 3 Poor electrical connection at the heater connector, such as loose pins or corrosion.
- 4 Short to ground in the heater wiring, causing low voltage at the heater.
- 5 Faulty PCM driver for the heater circuit, though this is less common.
- 6 Blown fuse or relay supplying power to the heater circuit (if applicable to the vehicle's design).



How to diagnose and fix it

- 1 Check for any related technical service bulletins (TSBs) or recalls for the vehicle, as some manufacturers have known issues with heater circuits.
- 2 Inspect the heater circuit wiring and connectors for damage, corrosion, or loose pins, and repair as needed.
- 3 Measure the resistance of the catalytic converter heater element with a multimeter and compare to the manufacturer's specification; replace the converter if the heater is open.
- 4 Test for voltage at the heater connector with the key on and engine off; if voltage is low, check the fuse and relay, and trace the circuit back to the PCM.
- 5 Perform a voltage drop test on both the power and ground sides of the heater circuit to identify excessive resistance.
- 6 If all wiring and components check out, suspect a faulty PCM, but only after confirming all other possibilities.
- 7 Clear the code and verify the repair by performing a cold start and monitoring the heater circuit with a scan tool.

Heater circuit faults that fool technicians

- A common misdiagnosis is replacing the catalytic converter when the real problem is a corroded connector or chafed wire that is much cheaper to fix.
- The heater circuit is only active during cold starts, so a fault may not appear during a warm engine test; always perform diagnostics with a completely cold engine.
- Some vehicles use a pulse-width modulated (PWM) signal to control the heater, so a standard test light may not illuminate; use a duty-cycle-capable meter or oscilloscope.
- A low voltage code can be set by a weak battery or charging system, so always verify battery voltage and charging system operation before condemning the heater circuit.
- The catalytic converter heater is not present on all vehicles; this code only applies to systems equipped with an electrically heated catalyst.

Can I keep driving with P04F4?

You can generally continue driving with this code, but avoid extended idling and cold-start short trips because the catalyst will take longer to reach efficiency, increasing emissions. If the check engine light flashes or you notice performance issues, have the vehicle inspected promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Test light or oscilloscope (for PWM circuits)
- Socket set and trim removal tools



Reading P04F4

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- F4** The exact fault within that area.

Often seen with

P0135 O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1) · **P04F5** Catalyst Heater Circuit Low Bank 2 · **P04F6** Catalyst Heater Circuit High Bank 1

See it working

Watch the animated explainer [How Crank and Cam Position Sensors Work](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p04f4/>

